Neuroendocrinology and Pituitary

NEUROENDOCRINOLOGY AND PITUITARY CASE REPORTS

A Case of Silent Corticotroph Adenoma

Usonwanne U. Ibekwe, MD, MPH[1], Nathan Zwagerman, MD[1], Srividya Kidambi, MD[1], Jerald Peter Marifke, MD[2].
[1]Medical College of Wisconsin, Milwaukee, WI, USA, [2]Prevea, Green Bay, WI, USA.

Background: Silent Corticotroph Adenomas (SCAs) are tumors with no biochemical or clinical features consistent with hypercortisolism but have positive immunostaining for ACTH. They account for approximately 1.1-6% of all pituitary adenomas and 5.5% of nonfunctioning adenomas. **Clinical Case:** A 49-year-old woman presented to clinic with a 6-month history of headache, vision changes, fatigue, hair thinning, brittle nails, lightheadedness, polydipsia, easy bruising, increased appetite, and weight gain of 178 pounds in 2 years. Labs obtained: morning cortisol 10 mcg/dl(7-25 mcg/dl), ACTH 59 pg/ml(7.2-63 pg/ml), IGF-1 96 ng/ml(52-328 ng/ml), LH 0.2 mIU/ml(1.9-12.5 mIU/ml), FSH 0.8 mIU/ml(2.5-10.2mIU/ml), alpha subunit <0.1 ng/ml(52-328 ng/ml), TSH 0.991 uIU/ml(0.358-3.74 uIU/ml), free T4 1.12 ng/dl(0.76-1.46 ng/dl), salivary cortisol 66 ng/dl(<100 ng/dl), 24-hour urine cortisol 10 mcg/24hr(3.5-45 mcg/24hr) and prolactin 64.3 ng/ml(2.8-29.2 ng/ml). No hook effect noted with serial dilution. MRI brain showed a 22 x 29 x 26 mm sellar mass extending into the suprasellar cistern displacing and compressing the optic nerves and chiasm superiorly with partial invasion into the right cavernous sinus. She had an endoscopic resection of the sellar mass. She developed diabetes insipidus post-operatively and required desmopressin transiently. In the immediate post-operative period, morning cortisol and ACTH were 16.9 ug/dl(6.2-19.4 ug/dL) 24.8 pg/ml(7.2-63.3 pg/ml) respectively. She was sent home without steroids. Pathology showed a staining pattern consistent with pituitary adenoma with positive staining for ACTH. One month after her surgery she was admitted with symptoms of orthostatic hypotension. Cortisol at 5pm was 3 ug/dl(2.3-11.9 ug/dl), ACTH 31.7 pg/ml(7.2-63.3pg/ml). She had a cosyntropin stimulation test done with peak cortisol of 19.3 ug/dl at 60 minutes. Due to her symptoms, she was started on oral hydrocortisone (HC) for secondary adrenal insufficiency (AI), but was eventually tapered off the steroids. Six months after her surgery, she developed worsening headaches. Repeat MRI obtained showed significant growth of the residual adenoma on the right side of the sella, invading the cavernous sinus. Morning cortisol level of 5.3 mcg/dl(4.3-22.4 mcg/dl) and ACTH level was 11 pg/ml(6-50 pg/ml). She had a repeat endoscopic resection of the pituitary tumor. Her post-surgery cortisol at 2 PM was 3 mcg/dl at which time patient reported symptoms of AI. She was discharged on HC. Pathology again showed a staining pattern consistent with pituitary adenoma with positive staining for ACTH. MIB-1 proliferative index was 5.6%. P53 immunostaining showed a moderate density of moderately intense nuclei in the adenoma. **Conclusion:** This case illustrates aggressive nature of SCAs with higher risk of recurrence compared to other non-functioning adenomas and therefore requires close follow up.

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A Case of Unusual Initial Presentation of Panhypopituitarism From Metastatic Adenocarcinoma of Lungs

Malik Waseem Ahmad, MD MPH, Susannah Becker, MD.
THE CHRIST HOSPITAL, Cincinnati, OH, USA.

Introduction: Metastatic disease of the pituitary gland account for about 1 to 2 percent of the sellar masses with suprasellar extension. Approximately 7 percent of the patients are symptomatic with varying symptoms based on the location and extent of metastases. We present you a case in which patient presented with features of Panhypopituitarism starting with severe hypothyroidism in a previously undiagnosed lung cancer. The Patient also suffered with some serious complications such as diabetes insipidus, adrenal insufficiency and complete vision loss. **Clinical Case:** A 60 y/o male with a past medical history of Hypertension, Chronic Obstructive Pulmonary Disease, smoking 2 packs of cigarettes per day for 40 years, second-degree heart block requiring a pacemaker, Chronic kidney disease 3b presented to the emergency department with complaints of left ankle pain, swelling, and syncope. The Patient was admitted for further workup and Endocrinology was consulted for concerns of hypothyroidism with severe myxedema and adrenal insufficiency. CT head was done, which showed sellar and suprasellar mass lesion measuring 1.8 x 2.2 x 3.0 cm. Finding were confirmed on MRI. Pertinent labs were PTH 57.7 pg/ml, TSH 0.33 uIU/ml, Free T4 0.4 ng/dl, ACTH 8 pg/ml, Cortisol 2.5 ug/dl, FSH 0.5 MIU/ml, LH 0.1 MIU/ml, testosterone 4 ng/dl, Prolactin 17.7 ng/ml, Insulin-like GFBP-3: 2.1 mg/L. The Patient was started on high dose Hydrocortisone, IV Levothyroxine T4 and desmopressin for Diabetes Insipidus. The Patient complained of peripheral vision loss. Neurosurgery partially resected the sellar mass through the transsphenoidal approach. Histopathology came back with Metastatic adenocarcinoma. Further clinical course was complicated by complete vision loss from increase in the sellar mass size after 8 weeks. Patient received radiation therapy but unfortunately there was no significant improvement in the vision. **Conclusion:** This case highlights some serious complication from metastatic disease of Pituitary gland from lung cancer. There is a need for continued annual screening for dysfunction of the hypothalamic-pituitary axis to monitor therapy. This case also highlights the importance of widespread screening of smokers in accordance with the standard lungs cancer screening recommendations. This can potentially prevent some of the serious complications of metastatic lung disease. **Reference:** Ross, D. Cooper, D. Mulder, J. (2020, September) Central Hypothyroidism. https://www.uptodate.com/contents/central-hypothyroidismSnyder, P. Cooper, D. Martin, K. (2020, September) Causes, presentation, and evaluation of sellar masses. https://www.uptodate.com/contents/causes-presentation-and-evaluation-of-sellar-masses